AMENDMENTS TO THE CLAIMS

1. (Currently amended) A thermistor device comprising a first layer comprised of a

first substance having a positive or negative temperature coefficient of resistance and a second

layer comprised of a second substance having conductivity or semiconductivity and located

directly on the first layer;

wherein said first substance is selected from the group consisting of vanadium oxides

 $(V_{(1-x)}M_x)_2O_3$ (M represents Cr or Ti, $0 \le x \le 0.2$).

2. (Original) The device according to claim 1, wherein said first substance is a

substance having a positive temperature coefficient of resistance and having 100 mΩcm or less

at operating temperature or lower.

3. (Currently amended) A thermistor device comprising a first layer comprised of a

first substance having a positive temperature coefficient of resistance and a second layer

comprised of a second substance having semiconductivity and formed directly on the first layer,

wherein the interface between the first and second layers changes to a pn junction, as the first

substance changes from being conductive to semiconductive or insulative at or near the transition

temperature T_{M-I};

wherein said first substance is selected from the group consisting of vanadium oxides

 $(V_{(1-x)}M_x)_2O_3$ (M represents Cr or Ti, $0 \le x \le 0.2$).

4. (Withdrawn) A thermistor device comprising a first layer comprised of a first

substance having a positive temperature coefficient of resistance and a second layer comprised of

a second substance having conductivity and located directly on the first layer, wherein the

interface between the first and second layers changes to a schottky barrier, as the first substance

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Suite 2800 Seattle, Washington 98101 206.682.8100

-2-

changes from being conductive to semiconductive or insulative at or near the transition temperature T_{M-I}.

5-18. (Canceled)

(Previously presented) The device according to claim 1, wherein said second 19.

substance is selected from the group consisting of n-type semiconductive oxides, p type

semiconductive oxides and p- or n-type single element semiconductors.

(Previously presented) The device according to claim 3, wherein said second 20.

substance is selected from the group consisting of n-type semiconductive oxides, p type

semiconductive oxides and p- or n-type single element semiconductors.

21. (Withdrawn) The device according to claim 4, wherein said second substance is

selected from the group consisting of n-type semiconductive oxides, p type semiconductive

oxides and p- or n-type single element semiconductors.

(Previously presented) The device according to claim 1, wherein said second 22.

layer has a thickness of 1000 nm or less.

23. (Previously presented) The device according to claim 3, wherein said second

layer has a thickness of 1000 nm or less.

(Withdrawn) The device according to claim 4, wherein said second layer has a 24.

thickness of 1000 nm or less.

(Currently amended) A thermistor apparatus comprising a thermistor device and 25.

a voltage control means for controlling an applied voltage to the thermistor device, wherein said

-3-

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Suite 2800

Seattle, Washington 98101

206.682.8100

thermistor device comprises a first layer comprised of a first substance having a positive temperature coefficient of resistance and a second layer comprised of a second substance having conductivity or semiconductivity and located directly on the first layer;

wherein said first substance is selected from the group consisting of vanadium oxides $(V_{(1-x)}M_x)_2O_3$ (M represents Cr or Ti, $0 \le x \le 0.2$).

26. (Currently amended) A thermistor apparatus comprising a thermistor device and a voltage control means for controlling an applied voltage to the thermistor device, wherein said thermistor device comprises a first layer comprised of a first substance having a positive temperature coefficient of resistance and a second layer comprised of a second substance having semiconductivity and located directly on the first layer, and the interface between the first and second layers changes to a pn barrier or a schottky barrier, as the first substance changes from being conductive to semiconductive or insulative at or near the transition temperature T_{M-1} :

wherein said first substance is selected from the group consisting of vanadium oxides $(V_{(1-x)}M_x)_2O_3$ (M represents Cr or Ti, $0 \le x \le 0.2$).

- 27. (Withdrawn) A thermistor apparatus comprising a thermistor device and a voltage control means for controlling an applied voltage to the thermistor device, wherein said thermistor device comprises a first layer comprised of a first substance having a positive temperature coefficient of resistance and a second layer comprised of a second substance having conductivity and located directly on the first layer, and the interface between the first and second layers changes to a pn junction or a schottky barrier as the first substance changes from being conductive to semiconductive or insulative at or near the transition temperature T_{M-I} .
- 28. (New) A thermistor device comprising a first layer comprised of a first substance having a positive temperature coefficient of resistance and a second layer comprised of a second

LAW OFFICES OF CHRISTENSEN O'CONNOR JOHNSON KINDNESSPLC 1420 Fifth Avenue Suite 2800 Seattle, Washington 98101 206.682.8100 substance having conductivity and located directly on the first layer, wherein the interface

between the first and second layers changes to a schottky barrier, as the first substance changes

from being conductive to semiconductive or insulative at or near the transition temperature T_{M-I};

wherein said first substance is selected from the group consisting of vanadium oxides

 $(V_{(1-x)}M_x)_2O_3$ (M represents Cr or Ti, $0 \le x \le 0.2$).

29. (New) The device according to claim 28, wherein said second substance is

selected from the group consisting of n-type semiconductive oxides, p type semiconductive

oxides and p- or n-type single element semiconductors.

30. (New) The device according to claim 28, wherein said second layer has a

thickness of 1000 nm or less.

31. (New) A thermistor apparatus comprising a thermistor device and a voltage

control means for controlling an applied voltage to the thermistor device, wherein said thermistor

device comprises a first layer comprised of a first substance having a positive temperature

coefficient of resistance and a second layer comprised of a second substance having conductivity

and located directly on the first layer, and the interface between the first and second layers

changes to a pn junction or a schottky barrier as the first substance changes from being

conductive to semiconductive or insulative at or near the transition temperature T_{M-I};

wherein said first substance is selected from the group consisting of vanadium oxides

 $(V_{(1-x)}M_x)_2O_3$ (M represents Cr or Ti, $0 \le x \le 0.2$).

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Suite 2800 Seattle, Washington 98101 206.682.8100

-5-